

3 internal combustion engine.

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[Please amend claim 25 as follows:]

1 25. (Thrice Amended) The tracklaying vehicle according to claim 6, wherein
2 electronic means comprises a characteristics control for determining the consumption-optimum
3 speed.

REMARKS

The drawings have been objected to under 37 CFR 1.84(p)(5) and 37 CFR 1.83(a). The drawings have been amended to clearly indicate all reference numerals and the specification has been amended to obviate the remaining objections.

The specification has been objected to under 37 CFR 1.71. The Applicants do not agree with the Examiner's objection as one skilled in the art would understand that by adjusting a gear ratio of a snow plow shaft by use of a potentiometer. Additionally, one would understand that the optimization of consumption along with the electronics and mechanisms required in order to have a tiltable cab portion and platform portion by use of a single actuator. These should be within one skilled in the art's ability to reproduce the Applicants' invention.

With respect to the optimization of consumption, it is explained on page 8, last paragraph to page 9, second paragraph that a consumption-optimum speed is selected for a power output required. Thereby, operative states, which are disadvantageous for consumption can be avoided in the partial load range. This is due to the fact that more than one operative state in the partial load range can deliver the required power output. Again, this would be understood by one skilled in the art.

Claims 19 and 25 have been rejected under 35 U.S.C. §112, first paragraph. As previously described, the specification describes the consumption-optimum speed for the engine and thus this rejection should be obviated.

Claims 1-3, 5-7, 9, 10, 18, 19, 22-26 and 28 have been rejected under 35 U.S.C. §112, second paragraph.

The claims have been amended to obviate this rejection.

Claims 1, 2, 6, 9, 10, 27 and 28 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Logan Manufacturing, PCT Publication No. WO 94/09548 in view of Buchdrucker, U.S. Patent No. 5,018,592.

The Examiner's rejection is respectfully traversed.

As amended, the claims are now directed to a piste-maintenance tracklaying vehicle comprising a vehicle control unit and accessory drives for additional devices that are mountable on the tracklaying vehicle. The vehicle has an internal combustion engine which is connected via a generator and at least one electric sprocket motor and a gear which is connected to at least one drive sprocket of the track. In overrun mode, an electric driving motor is switchable as a current generator for at least one accessory electrohydraulic or electric drive. The gained energy is used directly for supplying at least one electrohydraulic or electric drive with alternating current and the shaft of the electrohydraulic or electric drive of the additional device is adjustable electronically synchronized with the electric sprocket motor of the drive sprocket through the vehicle control unit. It is important to note that the Applicants' invention has an electrohydraulic or electric drive which is supplied directly with alternating current from the generator.

On the other hand, Logan is directed to a snow grooming tiller, preferably electric powered. Additionally, Logan describes a braking procedure which always includes a conversion from AC to DC, see page 27, line 11 ff “when motor is used for braking (in regeneration mode), the power amplifier performs a three-phase ac-to-dc boost converter to return kinetic energy to a battery and/or dissipating resistance grid, ...”. Whereas, in the inventors’ application, the energy gained can be used directly for operating accessory drives for the additional devices.

In Logan, the synchronization of the electric drive of the rotary snow plow and the electric motor with respect to the drive sprocket is carried out electronically through the vehicle control unit 28. The electrical synchronization guarantees a separate synchronization. On the other hand, Buchdrucker ‘592 does not teach a separate electronic synchronization, but discloses a mechanical system for coupling of the vehicle speed and the rotor speed and the rotary plow shaft. This coupling is not invariable, thus the teaching of Buchdrucker ‘592 is not a synchronization but a single stage reducing gear. The Applicants agree with the Examiner that Logan fails to teach the implement as being a rotary snow plow synchronized to the electric motor. However, the Applicants do not agree that Buchdrucker ‘592 teaches a driving vehicle having a motor, a rotary snow plow, and drive wheels wherein the operation of the plow and the wheels may be synchronized through the operation of clutches. Buchdrucker ‘592 refers to a two wheel snow blower which is used to remove snow from a pedestrian walkways or similar type areas. Additionally, the synchronization between the wheel drive and the augers is achieved through mechanical means. The only reason there may be a synchronization between the auger and the wheel velocity is that a single engine is used for both the other drive as well as the wheel drive. The internal combustion engine has one drive

shaft on which a first clutch for the driving motor as well as the second clutch for the wheel drive are collapsibly aligned and positioned. Therefore both clutches are engaged, and they are automatically synchronized as they use the same drive shaft. However, this is not equivalent to electrical synchronization as claimed in the Applicants' invention.

Additionally, the Applicants' distinguish from the prior art of record in that their invention includes the electrohydraulic or electric drive of additional devices is adjustable electronically synchronized with the electric motor of the drive sprocket through the vehicle control. The electrohydraulic or electric drive is supplied directly with alternating currents from a generator. This is very different from that taught by Logan. The electric sprocket motor and the electric driving motor are described in the specification on page 2, line 9 and page 3, line 16. With an electrohydraulic or electric drive adjustably synchronized with the electric motor of the sprocket, it is possible to operate the rotor snow plow in the most efficient way, dependent on the snow to be treated and also dependent on the slope of the piste the tracklaying vehicle is working on.

As independent claim 1 is patently distinguishable from the prior art references, the remaining claims dependent therefrom are also patently distinguishable.

In view of the foregoing, it is believed that the amended claims and the claims dependent there from are in proper form. The Applicants respectfully contend that the teachings of Logan in view of Buchdrucker '592 and any combination of Ossie '919, Kawakatsu '429, and Tsutsui et al. '880 do not establish a *prima facie* case of obviousness under the provisions of 35 U.S.C. §103(a). Thus, claims 1-3, 5-7, 9, 10, 18, 19, 22-26 and 28 are considered to be patently distinguishable over the prior art of record.

The application is now considered to be in condition for allowance, and an early indication of same is earnestly solicited.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Arlene J. Powers', is written over a horizontal line.

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IN THE SPECIFICATION:

The following paragraph has been inserted before line 22, on page 15:

-- A stopping operation is effected by means of a safety logic, as previously described.

The safety logic can sense the position of the traveling direction switch 60. --

IN THE DRAWINGS:

Figure 3 has been amended as indicated on the attached sheet.

IN THE CLAIMS:

Claim 1 has been amended as follows:

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- 1 1. (Thrice Amended) A piste-maintenance tracklaying vehicle comprising a vehicle
- 2 control unit [and an internal combustion engine which is drivingly connected via a gear to a
- 3 drive sprocket of at least one track,] and accessory drives for additional devices that are
- 4 mountable on said tracklaying vehicle, and/or for vehicle components, [such as a tilting device
- 5 for a platform and driver's cab or track tensioner,] with an internal combustion engine being
- 6 connected via a generator and at least one electric sprocket motor and a gear to [each] at least
- 7 one drive sprocket of a track, and in overrun mode an electric driving motor being switchable
- 8 as a current generator for at least one accessory [drives designed as]electrohydraulic or
- 9 electric drives, wherein [at least said] the gained energy is used directly for supplying the at
- 10 least one electrohydraulic or electric drive with alternating current and a shaft of the
- 11 electrohydraulic or electric drive [for a shaft] of said additional device is adjustable electrically
- 12 synchronized with the electric sprocket motor of said drive sprocket through the vehicle control
- 13 unit.

Claim 2 has been amended as follows:

- 1 2. (Thrice Amended) The tracklaying vehicle according to claim 1, wherein [each
2 drive sprocket is drivingly connected to a separate electric motor] the electric driving motor is
3 the at least one electric sprocket motor.

Claim 3 has been amended as follows:

- 1 3. (Thrice Amended) The tracklaying vehicle according to claim 1, wherein the
2 [planetary gear is arranged between the electric motor and the drive sprocket] electric motor is
3 a winch driving motor.

Claim5 has been amended as follows:

- 1 5. (Thrice Amended) The tracklaying vehicle according to claim 1, wherein said
2 tracklaying vehicle [is designed with] has an energy buffer fed by said generator or by said
3 electric motor which operates as a generator.

Claim 6 has been amended as follows:

- 1 6. (Thrice Amended) The tracklaying vehicle according to claim 1, wherein said
2 tracklaying vehicle further comprises an electronic high-performance [means] mechanism for
3 controlling travel engines or motors and/or accessory drives.

Claim 9 has been amended as follows:

- 1 9. (Thrice Amended) The tracklaying vehicle according to claim 6, wherein said
2 electronic high-performance [means] mechanism is centrally arranged in said tracklaying
3 vehicle for distributing energy to all consumers and for energy feedback.

Claim 10 has been amended as follows:

- 1 10. (Thrice Amended) The tracklaying vehicle according to claim 1, wherein all
2 components of said tracklaying vehicle are composed [in the manner of] of interchangeable
3 modules.

Claim 19 has been amended as follows:

- 1 19. (Thrice Amended) The tracklaying vehicle according to claim 18, wherein said
2 electronic high-performance [means] mechanism or a vehicle control unit, respectively, is
3 connected to said setpoint transmitter and comprises an electronic evaluation means at least for
4 determining consumption-optimum speeds for said internal combustion engine.

Claim 24 has been amended as follows:

- 1 24. (Thrice Amended) The tracklaying vehicle according to claim 23, wherein the
2 setpoint is convertible by [the] electronic means into a speed which is predetermined for said
3 internal combustion engine.

Claim 25 has been amended as follows:

- 1 25. (Thrice Amended) The tracklaying vehicle according to claim 6, wherein [said]
2 electronic means comprises a characteristics control for determining the consumption-optimum
3 speed.